

## IN THE CLAIMS:

Claims 1, 2, 5 - 8, 10, 12, 14, 16, 19, and 20 are amended, claims 23 - 46 are added, and claims 21 and 22 are cancelled.

1. (Currently Amended) A personal computer system comprising:  
a plurality of different types of coordinate input devices;  
an output means for outputting a signal from each of said coordinate input devices, the output means configured to embed an identifier in the signal that identifies one of the coordinate input devices; and  
a processing means for ~~simultaneously~~ alternating between the signals from said coordinate input devices as the signals are transmitted to the output means, said signals consisting of a first and a second data stream of three or six bytes;  
wherein ~~a single output port of said output means~~ cursor displayed on a screen of said personal computer can be maintained ~~is~~ at a constant position as one coordinate input device changes to another coordinate input device.

2. (Currently Amended) A personal computer system comprising:  
a first input device;  
a second input device, said second input device performing a detecting operation in a manner differing from said first input device; and  
an output ~~means for converting~~ configured to send one of an output signal from said first input device or, an output signal from said second input device; or for converting the output signals from said first input device and from said second input device in a three or a six byte data stream and outputting the resulting signals in an identical format, whereby said first input device and said second input device transmit signal are used by simultaneously in an alternating between the signals ~~sequence~~ from the first input device and the second input device.

3. (Original) A personal computer system according to claim 2, wherein said first input device outputs absolute coordinate data and/or relative coordinate data, and said second input device outputs relative coordinate data.

4. (Original) A personal computer system according to claim 2, wherein said first input device is a pad-type input device disposed closer to an operator than said keyboard input device, and said second input device is a stick-type input device disposed between keys of said keyboard input device.

5. (Currently Amended) A personal computer system comprising:  
a first input device;  
a second input device;  
an output means for outputting operation signals from said first input device and from said second input device in a variable length ~~an identical~~ signal format; and  
a processing means ~~found that r simultaneously alternating~~ alternates between the signals in accordance with an operation of each of said first input device and said second input device,  
wherein said output means adds an identifier ~~identification information to a part~~ selected portions of the operational signals ~~format according to the type of that~~ distinguishes the input devices.

6. (Currently Amended) A personal computer system according to claim 5, wherein said first input device outputs variable information on X, Y, and Z three-dimensional coordinates, and said second input device outputs variable information on X and Y two-dimensional coordinates, and ~~when in using~~ when using said second device is used, ~~fixed said identifier information is added to a Z-information field of the signal format~~ fixed said identifier information is added to a Z-information field of the signal format output from said output device.

7. (Currently Amended) A personal computer system according to claim 6, wherein said output device generates six-byte absolute coordinate data and supplies it to said processing unit in response to the variable information on the X, Y, and Z three-dimensional coordinates supplied from the first input device, and said output device converts three-byte displacement data into six-byte data in response to the variable information on the X and Y two-dimensional coordinates supplied from the second input device, and said identifier ~~fixed information~~ is added to a Z-information field of the converted six-byte data.

8. (Currently Amended) A personal computer system according to claim 7, wherein individual byte fields of the six-byte data supplied from said output device to said processing unit respectively indicate ~~the said identifier~~ creation information, X count information, X count and button information, Y count and button information, Y count information, and Z count information, and wherein the Z-count information becomes variable in accordance with an operation of said first input device in response to the variable information supplied from said first input device, and the Z-count information becomes fixed in response to the variable information supplied from said second input device.

9. (Original) A personal computer system according to claim 5, wherein said output device comprises a switching portion for switching between a path for converting the variable information obtained from said second input device into the six-byte and a path for outputting the variable information as three-byte data.

10. (Currently Amended) An input device comprising:  
an input/output port;  
a first pointing device coupled to an input of the input/output port; and  
a second pointing device coupled directly to the input of the input/output port;  
wherein the input/output port has a single output channel through which data is  
transferred from the first pointing device and the second pointing device to a driver  
~~distant that resides on a host from the first pointing device and the second pointing device;~~  
and  
wherein said first pointing device and said second pointing device can transmit a  
fixed length data stream of three bytes and at least one of said first pointing device and  
said second pointing device can transmit a fixed length data stream of six bytes.

11. (Original) The input device of claim 10 wherein the first pointing device  
comprises a touch pad.

12. (Currently Amended) The input device of claim 10 wherein the second  
pointing device comprises a pointing stick and wherein said first and said second pointing  
devices transmit data in a predetermined bit sequence.

13. (Previously Added) The input device of claim 11 wherein the second pointing  
device comprises a pointing stick.

14. (Currently Amended) The input device of claim 13 wherein ~~both pointing  
devices~~ the touch pad and the pointing stick comprise cursor-control devices that control  
an onscreen movement of a cursor ~~simultaneously smoothly in response to a signal  
transmitted from said driver residing on said host.~~

15. (Previously Added) The input device of claim 10 wherein the input device comprises a dual pointing device, the first input device comprises a first relative pointing device integrated with an absolute pointing device, and the second input device comprises a second relative pointing device.

16. (Currently Amended) The input device of claim 15 wherein the second input device further comprises a format converter configured to send identifying data to the driver that identifies-distinguishes the first pointing device from the and-second relative pointing devices.

17. (Previously Added) The input device of claim 10 wherein the first pointing device is directly coupled to the second pointing device.

18. (Previously Added) The input device of claim 10 wherein the single output channel is a serial port capable of sending and receiving data from a processor.

19. (Currently Amended) A dual pointing device comprising:  
an input/output port;  
a first pointing device comprising a first relative pointing device and an absolute pointing device coupled to an input of the input/output port; and  
a second pointing device comprising a second relative pointing device coupled directly to the input of the input/output port;  
wherein the input/output port has a single output channel through which data is transferred from the first pointing device and the second pointing device in only one of two fixed data stream lengths to a driver ~~distant~~ that resides on a host ~~from the first pointing device and the second pointing device~~; and  
wherein the first and second pointing devices further comprise cursor-control devices that can smoothly control an on-screen cursor movement.

20. (Currently Amended) A dual pointing device comprising:  
a single input/output port;  
a first pointing device comprising a first relative pointing device and an absolute pointing device coupled to an input of the input/output port;  
a second pointing device comprising a second relative pointing device coupled directly to the input of the input/output port and a ~~format converter device~~ device configured to send identifying data to a driver that identifies the first and second relative pointing devices;  
wherein the input/output port has a single output channel through which data is transferred from the first pointing device and the second pointing device to the driver ~~distant from~~ coupled to the first pointing device and the second pointing device and wherein the first and second pointing devices further comprise cursor-control devices that can control a position of a cursor ~~simultaneously~~.

21. (Cancelled).

22. (Cancelled).

23. (New) A dual pointing device used to control a cursor in a computer comprising:

- a port;
- a format logic coupled to the port, the format logic configured to transmit a data stream in lengths of three and more bytes;
- a touch pad comprising a first relative pointing device and an absolute pointing device coupled to the format logic;
- a stick comprising a second relative pointing device coupled to the format logic;
- the absolute pointing device comprising a sensor that translates an absolute position on a surface of the touch pad to a specific location on a screen of the computer;
- and
- the first relative pointing device and the second relative pointing device each comprising a cursor control device in which a movement of a cursor on the screen correlates to a movement detected by the first relative pointing device or the second relative pointing device;

wherein the format logic is configured to embed identifying data in the data stream in response to a command received from the computer, the identifying data distinguishing the stick from the touch pad, and the port comprise a single channel through which data is transmitted to the computer.

24. (New) The dual pointing device of claim 23 wherein the format logic is configured to transmit data in fixed lengths of three and six bytes.

25. (New) The dual pointing device of claim 23 wherein the computer comprises a notebook computer.

26. (New) The dual pointing device of claim 23 wherein the computer comprises a personal computer.

27. (New) The dual pointing device of claim 23 wherein the format logic is coupled to a buffer that stores relative data temporarily before transferring the relative data in lengths of three or more bytes to the computer.

28. (New) The dual pointing device of claim 27 wherein the format logic is coupled to a second buffer that stores absolute data temporarily before transferring the absolute data to the computer.

29. (New) The dual pointing device of claim 27 wherein the buffer delivers data in fixed lengths of three or six bytes in response to an output from a switch controller.

30. (New) The dual pointing device of claim 27 wherein the length of the data transmitted by the format logic is controlled by the command issued from the computer.

31. (New) The dual pointing device of claim 23 wherein the format logic is coupled to a buffer that stores absolute data temporarily before delivering the absolute data to the computer.

32. (New) The dual pointing device of claim 23 wherein the buffer stores data temporarily before transferring the data in a length controlled by the command received from the computer.

33. (New) The dual pointing device of claim 23 wherein the stick comprises a distortion sensor that moves the cursor in a direction of a pressure placed upon it.



34. (New) The dual pointing device of claim 23 wherein the touch pad comprises a sensor that moves the cursor in a direction of a pressure placed upon it.

35. (New) The dual pointing device of claim 23 wherein the stick is daisy chained to the touch pad.

36. The dual pointing device of claim 23 wherein the single channel comprises a serial port.

37. The dual pointing device of claim 23 wherein the single channel comprises a bidirectional serial data port.

38. The dual pointing device of claim 23 wherein the identifying data comprises an identification number.

39. (New) A dual pointing device used to control a cursor in a computer comprising:

- a port;

- a format logic coupled to the serial port, the format logic configured to transmit data in multiple byte lengths;

- a touch pad comprising a first relative pointing device and an absolute pointing device coupled to the format logic;

- a stick comprising a second relative pointing device coupled to the format logic;

- the absolute pointing device comprising a sensor that translates an absolute position on a surface of the touch pad to a specific location on a screen of the computer;
- and

the first relative pointing device and the second relative pointing device each comprising a cursor control device in which a movement of a cursor on the screen correlates to a movement detected by the first relative pointing device or the second relative pointing device;

wherein the format logic is configured to embed identifying data in a data stream in response to a command issued from the computer, the identifying data comprising an identification code that distinguishes the stick from the touch pad, and the port comprise a bi-directional serial channel through which data is sequentially transmitted to the computer.

40. (New) The dual pointing device of claim 39 wherein the port comprises a serial port.

41. (New) A dual pointing device used to control a cursor in a computer comprising:

a bi-directional serial port;

a format logic coupled to the serial port, the format logic configured to transmit data in streams of three and more bytes;

a touch pad comprising a first relative pointing device and an absolute pointing device coupled to the format logic;

a stick comprising a second relative pointing device coupled to the format logic;

the absolute pointing device comprising a sensor that translates an absolute position on a surface of the touch pad to a specific location on a screen of the computer; and

the first relative pointing device and the second relative pointing device each comprising a cursor control device in which a movement of a cursor on the screen correlates to a movement detected by the first relative pointing device or the second relative pointing device;

wherein the format logic is configured to embed identifying data in the data streams in response to a processor command, the identifying data comprising an identifier that distinguishes the stick from the touch pad.

42. (New) A method of processing data transmitted from a plurality of relative pointing devices integrated within a computer, comprising:

translating a first movement detected by one of a plurality of relative pointing devices to a first data stream associated with an on-screen movement of a cursor on a display of a computer;

monitoring a serial port coupled to a device driver resident to the computer;

embedding identifying data in the first data stream that identifies at least one of the plurality of relative pointing devices;

transferring the first data stream in lengths of three or more bytes to the computer through the serial port; and

identifying the source of the first data stream when the identifying data is decoded.

43. The method of claim 42 wherein the act of embedding identifying data in the first data stream occurs when a command from the computer is received

44. (New) The method of claim 41 further comprising translating a second movement detected by an absolute pointing device to a second data stream associated with an on-screen position of the cursor on the display of the computer.

45. (New) The method of claim 44 further comprising transferring the first and the second data streams in lengths of three or six bytes to the computer through the serial port.

46. (New) The method of claim 45 further comprising identifying the source of the second data stream when the identifying data is decoded.

47. (New) A method of processing data transmitted from a touch pad or a pointing stick integrated within a keyboard of a computer, comprising:

translating a first movement detected by one of a plurality of relative pointing devices to a first data stream associated with an on-screen movement of a cursor on a display of a computer;

translating a second movement detected by an absolute pointing device to a second data stream associated with an on-screen position of the cursor on the display of the computer;

monitoring a serial port coupled to a device driver resident to the computer;

embedding identifying data in the first data stream that identifies a touch pad or a pointing stick when a command from the device driver is received on the serial port;

transferring the first data stream and the second data stream in lengths of three or more bytes to the computer through the serial port; and

identifying the touch pad or pointing stick when the identifying data is decoded.

48. (New) The method of claim 47 wherein the identifying data identifies a touch pad or a pointing stick.

49. (New) The method of claim 47 wherein one of the plurality of pointing devices comprises a relative and an absolute pointing device.

50. (New) The method of claim 49 wherein the relative and absolute pointing device comprises a touch pad.

Respectfully submitted,



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